DETAILED ACTION

Response to Amendment

1. This communication is in response to the Amendment filed 19 January 2010.

2. Claims 1, 3-5, 7, 8, 10, 13-16 and 19 are currently pending. In the Amendment filed 19 January 2010, claims 1 and 16 are amended and claims 2, 6, 9, 11, 12, 17 and 18 are cancelled. This action is made Final.

3. The previously presented prior art rejections are maintained.

Claim Objections

4. The Objections to Claims 1 and 16 are withdrawn as necessitated by Amendment.

5. Claim 16 is objected to because of the following informalities: the search unit limitation recites the phrase "step (d)" and the conversion unit limitation recites "step (d), (e) or (f)." It is noted that the system of claim 16 does not previously recite steps. Appropriate correction is required.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 1, 3-5, 7, 8, 10, 13, 15, 16 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No 5,911,139 to Jain et al (hereafter Jain et al) in view of US PGPub 2002/0106135 to Iwane (hereafter Iwane) in view of US Patent No 6,961,463 to Loui et al (hereafter Loui) in view of US PGPub 2002/0176116 to Rhodes et al (hereafter Rhodes) in view of US Patent No 7,127,106 to Neil et al (hereafter Neil) in view of US PGPub 2005/0055344 to Liu et al (hereafter Liu).

Referring to claim 1, Jain discloses an image processing method executed by an image processing apparatus having a scan function which scans an original document, the method comprising the steps of:

(a) scanning the original document to generate an input image [device includes a scanner; insertion module] (see column 10, lines 18-19 and column 9, lines 16-36);

(b) acquiring first search information [alpha-numeric query] associated with the input image on the basis of search information input by a user (see column 9, lines 11-15);

(c) acquiring feature data [feature vector] contained in the input image as second search information (see column 9, lines 45-48);

(d) searching for an original data file corresponding to the input image in the database by using the first [alpha-numeric query] and second [feature vector] search information (see column 9, lines 52-67); and

(g) converting the input image into data [vector data] and storing the data in the database [database 132] (Jain: see column 9, lines 40-52).

However, Jain et al fails to explicitly disclose the further limitation of the data in step (g) being outline data and wherein the outline data indicates a visual representation of a tracing of the outline of a character or a graphic object and (h) converting the image data file into the outline data and storing the outline data in the database in a case where the original data file corresponding to the input image is found in step (d), (e) or (f) and the original data file is an image file. Iwane discloses obtaining an input image and then generating image information in order to compare objects (see abstract), including the further limitation of converting the input image into outline data and storing the outline data in the database (see [0244]), wherein the outline data indicates a visual representation of a tracing of the outline of a character or a graphic object (see [0173]) and (h) converting the image data file into the outline data and storing the outline data in the database in a case where the original data file corresponding to the input image is found in step (d), (e) or (f) and the original data file is an image file (see [0173] and [0244]).

It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the outlining method of Iwane in order to gather the feature information stored by Jain. One would have been motivated to do so in order to be able to extract features from an image in a case where OCR is not a viable solution (Iwane: see [0010]-[0012]).

However, the combination of Jain and Iwane (hereafter Jain/Iwane) fails to explicitly disclose the further limitation of (g) wherein the image is only stored in a case where the original file corresponding to the input is not found in said step (d); and (i) declining to store the input image data into the database, in a case that the image file corresponding to the input image is found in said step (d), (e) or (f) and the original data file is not an image data file. Loui discloses a duplicate detection algorithm to determine whether two pictures are so similar that a consumer would only put one of them in the album [database], including the further limitations of wherein the image is only stored in a case where the image file corresponding to the input is not found in said step (d); and (i) declining to store the input image data into the database, in a case that the image file corresponding to the input image is found in said step (d), (e) or (f) and the original data file is not an image data file (see column 4, lines 11-51) since the concept of storing only one copy of an image increases storage efficiency and search efficiency.

It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the duplicate detection algorithm of Loui with the storage system of Jain/Iwane. One would have been motivated to do since the

methodology of Loui can be embodied in any different types of systems (Loui: see column 7, lines 13-24) and since the concept of storing only one copy of an image increases storage efficiency and search efficiency.

The combination of Jain/Iwane and Loui (hereafter Jane/Iwane/Loui) fails to explicitly disclose the further limitations of attempting to detect pointer information from the input image indicating a storage location of an original data file in the database and using the pointer information in a case that the pointer information is detected. Rhodes discloses embedding watermarks into images (see abstract), including the further limitations of attempting to detect pointer information [watermark readers perform this function] from the input image indicating a storage location of an original data file in the database and using the pointer information in a case that the pointer information is detected [carry a pointer or network address to its electronic original] (see [0024] and [0043]).

It would have been obvious to one of ordinary skill in the art at the time of the invention to first attempt to search for a watermark pointing to the location of an original file as disclosed by Rhodes before searching for the file utilizing the search features of Jain/Iwane/Loui. Also, it would have been obvious to one of ordinary skill in the art to utilize the search features of disclosed by Jain/Iwane/Loui if the pointer in the watermark is defective. One would have been motivated to do so in order to increase the efficiency and accuracy of the searching process since a pointer links directly to the original file.

The combination of Jain/Iwane/Loui and Rhodes (hereafter Jain/Iwane/Loui/Rhodes) fails to explicitly disclose the further limitation of (g)

registering the information input by the user in step (b) in an index file regardless of whether the original data file corresponding to the input image is or is not found in step (d), wherein the index file of registered search information input by the user is used in the next search for the original data file. Neil discloses image processing (see abstract and Fig 5), including the further limitation of (f) registering the information input by the user in step (a) [text annotation] and the feature data [visual features] acquired in step (b) in an index file [images may be indexed based on visual features, text annotation, assigned subjects or image types] (see column 1, lines 65-66).

It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the step of Neil to index the database of Jain/Iwane/Loui/Rhodes. One would have been motivated to do so since it is well-known in the art that the use of an index increases the speed and efficiency of a search while decreasing resource costs.

The combination of Jain/Iwane/Loui/Rhodes and Neil (hereafter Jain/Iwane/Loui/Rhodes/Neil) fails to explicitly disclose the further limitation of the index, wherein the index file is used in a next search for the original data file. Liu discloses an image retrieval system that allows a user to specify a query using a combination of keywords and example images (see [0018]) including the further limitation of wherein the index file of registered search information input by the user is used in a next search for the original data file [another approach to incorporate additional keywords into the system is to utilize the user's input queries; whenever, the user feeds back a set of images marked as being

irrelevant to the query, the input keywords are added into the system and linked with images in the set] (see [0049]).

It would have been obvious to one of ordinary skill in the art at the time of the invention to apply the use of linking user submitted keywords as disclosed by Liu to the index of Jain/Iwane/Loui/Rhodes/Neil. One would have been motivated to do so since it is well-known in the art that the use of an index increases the speed and efficiency of a search while decreasing resource costs.

Referring to claim 3, Jain/Iwane/Loui/Rhodes/Neil/Liu discloses the method according to claim 1, wherein the first search information comprises a keyword [keywords] for searching using the input image (Jain: see Fig 3, item 201 and column 9, lines 11-15).

Referring to claim 4, Jain/Iwane/Loui/Rhodes/Neil/Liu discloses the method according to claim 1, wherein the first search information comprises a data size [file size] of the original data file (Jain: see Fig 3, item 201 and column 9, lines 11-15).

Referring to claim 5, Jain/Iwane/Loui/Rhodes/Neil/Liu discloses the method according to claim 1, wherein the first search information comprises date information [File Date] of the original data file (Jain: see Fig 3, item 201 and column 9, lines 11-15).

Referring to claim 7, Jain/Iwane/Loui/Rhodes/Neil/Liu discloses the method according to claim 1, wherein the second search information comprises a character code of a character recognition [face recognition] result which is

obtained by performing a character recognition process with respect to a character region in the input image (Jain: see column 25, lines 31-41).

Referring to claim 8, Jain/Iwane/Loui/Rhodes/Neil/Liu discloses the method according to claim 1, wherein the second search information comprises feature data of each block obtained by the region segmentation of the input image (Jain: see column 9, lines 45-67).

Referring to claim 10, Jain/Iwane/Loui/Rhodes/Neil/Liu discloses the method according to claim 1, further comprising the step of: converting the input image, which has been converted into the vector data, into data in a format which can be handled by application software (Jain: see column 31, lines 12-14).

Referring to claim 13, Jain/Iwane/Loui/Rhodes/Neil/Liu discloses the method according to claim 1, further comprising the step of: outputting the original data file, wherein new pointer information is added to the original data file (Jain: see column 14, lines 7-19; Rhodes: see [0022]).

Referring to claim 14, Jain/Iwane/Loui/Rhodes/Neil/Liu discloses the method according to claim 13, wherein the new pointer information is added as a digital watermark to the original data file (Rhodes: see [0022]).

Referring to claim 15, Jain/Iwane/Loui/Rhodes/Neil/Liu discloses the method according to claim 1, wherein in the step (d), the original data file is searched for by using at least one of keyword search [keywords], full-text search, and layout search (Jain: see Fig 3, item 201 and column 9, lines 11-15).

Referring to claim 16, Jain discloses an image processing apparatus having a scan function which scans an original document, comprising:

a scanning unit [scanner] constructed to scan the original document to generate an input image (see column 10, lines 18-19 and column 9, lines 16-36);

an input unit constructed to acquire first search information [alpha-numeric query] associated with the input image, wherein the first search information is acquired on the basis of search information input by a user (see column 9, lines 11-15);

a acquisition unit constructed to search for acquiring feature data [feature vector] contained in the input image as second search information (see column 9, lines 45-48);

a search unit constructed to search for an original data file corresponding to the input image in a database by using the first [alpha-numeric query] and second [feature vector] search information (see column 9, lines 52-67); and

a conversion unit constructed to convert the input image into data [vector data] and to store the data in the database [database 132] (Jain: see column 9, lines 40-52).

However, Jain fails to explicitly disclose the further limitation of the data being outline data and wherein the outline data indicates a visual representation of a tracing of the outline of a character or a graphic object. Iwane discloses obtaining an input image and then generating image information in order to compare objects (see abstract), including the further limitation of converting the input image into outline data and storing the outline data in the database (see [0244]), wherein the outline data indicates a visual representation of a tracing of the outline of a character or a graphic object (see [0173]) and constructed to

convert an image data file into the outline data and store the outline data in the database in a case where the original data file corresponding to the input image is found in step (d), (e) or (f) and the original data file is an image file (see [0173] and [0244]).

It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the outlining method of Iwane in order to gather the feature information stored by Jain. One would have been motivated to do so in order to be able to extract features from an image in a case where OCR is not a viable solution (Iwane: see [0010]-[0012]).

However, Jain/Iwane fails to explicitly disclose the further limitation of wherein the original data file is only stored in a case where the original data file corresponding to the input is not found by said search unit; and a unit constructed to decline storing the input image data into the database, in a case that the original data file corresponding to the input image file is found by said search unit. Loui discloses a duplicate detection algorithm to determine whether two pictures are so similar that a consumer would only put one of them in the album [database], including the further limitations of wherein the image is only stored in a case where no original data file corresponding to the input image is found by said search unit; and a unit constructed to decline storing the input image data into the database, in a case that the original data file corresponding to the input image file is found by said search unit (see column 4, lines 11-51) since the concept of storing only one copy of an image increases storage efficiency and search efficiency.

It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the duplicate detection algorithm of Loui with the storage system of Jain/Iwane. One would have been motivated to do since the methodology of Loui can be embodied in any different types of systems (Loui: see column 7, lines 13-24) and since the concept of storing only one copy of an image increases storage efficiency and search efficiency.

The combination of Jain/Iwane and Loui (hereafter Jane/Iwane/Loui) fails to explicitly disclose the further limitations of attempting to detect pointer information from the input image indicating a storage location of an original data file in the database and using the pointer information in a case that the pointer information is detected. Rhodes discloses embedding watermarks into images (see abstract), including the further limitations of attempting to detect pointer information [watermark readers perform this function] from the input image indicating a storage location of an original data file in the database and using the pointer information in a case that the pointer information is detected [carry a pointer or network address to its electronic original] (see [0024] and [0043]).

It would have been obvious to one of ordinary skill in the art at the time of the invention to first attempt to search for a watermark pointing to the location of an original file as disclosed by Rhodes before searching for the file utilizing the search features of Jain/Iwane/Loui. Also, it would have been obvious to one of ordinary skill in the art to utilize the search features of disclosed by Jain/Iwane/Loui if the pointer in the watermark is defective. One would have

been motivated to do so in order to increase the efficiency and accuracy of the searching process since a pointer links directly to the original file.

Jain/Iwane/Loui/Rhodes fails to explicitly disclose the further limitation of a registration unit for registering the search information input by the user in an index file, wherein the index file of registered search information input by the user is used in a next search for the original data file. Neil discloses image processing (see abstract and Fig 5), including the further limitation of a registration unit registering the information input by the user [text annotation] in an index file [images may be indexed based on visual features, text annotation, assigned subjects or image types] (see column 1, lines 65-66).

It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the step of Neil to index the database of Jain/Iwane/Loui/Rhodes. One would have been motivated to do so since it is well-known in the art that the use of an index increases the speed and efficiency of a search while decreasing resource costs.

The combination of Jain/Iwane/Loui/Rhodes/Neil fails to explicitly disclose the further limitation of the index, wherein the index file is used in a next search for the original data file. Liu discloses an image retrieval system that allows a user to specify a query using a combination of keywords and example images (see [0018]) including the further limitation of wherein the index file of registered search information input by the user is used in a next search for the original data file [another approach to incorporate additional keywords into the system is to utilize the user's input queries; whenever, the user feeds back a set of images

marked as being irrelevant to the query, the input keywords are added into the system and linked with images in the set] (see [0049]).

It would have been obvious to one of ordinary skill in the art at the time of the invention to apply the use of linking user submitted keywords as disclosed by Liu to the index of Jain/Iwane/Loui/Rhodes/Neil. One would have been motivated to do so since it is well-known in the art that the use of an index increases the speed and efficiency of a search while decreasing resource costs.

Referring to claim 19, Jain/Iwane/Loui/Rhodes/Neil/Liu discloses the method according to claim 13, wherein the new pointer information is added as a two-dimensional barcode [digital watermarking] to the original data file (Rhodes: see [0022]).

Response to Arguments

8. Referring to Applicant's arguments in the Remarks, the Examiner respectfully disagrees that the previously presented art fails to teach the newly added limitations. In paragraphs [0173] and [0244], Iwane teaches (h) converting the image data file into the outline data and storing the outline data in the database in a case where the original data file corresponding to the input image is found in step (d), (e) or (f) and the original data file is an image file. Also, it would have been obvious to one of ordinary skill in the art at the time of the invention to first attempt to search for a watermark pointing to the location of an original file as disclosed by Rhodes before searching for the file utilizing the search features of Jain/Iwane/Loui. Also, it would have been obvious to one of

ordinary skill in the art to utilize the search features of disclosed by Jain/Iwane/Loui if the pointer in the watermark is defective. One would have been motivated to do so in order to increase the efficiency and accuracy of the searching process since a pointer links directly to the original file.

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KIMBERLY LOVEL whose telephone number is (571)272-2750. The examiner can normally be reached on 8:00 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Cottingham can be reached on (571) 272-7079. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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